DC STEREO INTEGRATED AMPLIFIER

KA-8100

INSTRUCTION MANUAL

the sound approach to quality

KENWOOD

INTRODUCTION

The purpose of this manual is to acquaint you with the operating features of your new amplifier. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.

We suggest that you read this manual carefully. Knowing how to set up your amplifier, to the best advantage, will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your amplifier to meet your special requirements.

SERIAL NUMBER

Record your SERIAL NUMBER on the spaces designated on the warranty card. You will find the serial number on the back of the unit.

AFTER UNPACKING

After unpacking, we recommend you inspect and examine the unit for any possible shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend you retain the original carton and packing materials to prevent any damage should you transport or ship your unit in the future.

PRECAUTIONS CONCERNING INSTALLATION

(a) Avoid locations subject to direct sunlight.
(b) Avoid high or low temperature extremes.
(c) Keep the amplifier away from heat radiating source.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

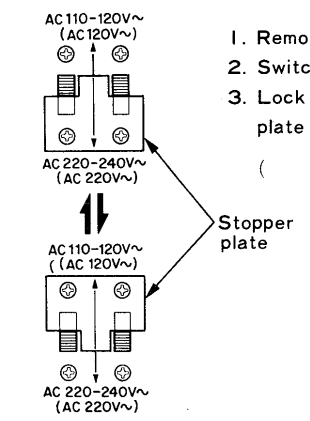
NOTES

1. Units shipped to U.S.A. and Canada are designed to be operated on 120 volts AC only, and the Scandinavian countries, on 220 volts AC only. Therefore, they are not equipped with an AC Voltage Selector Switch, and all reference to such a switch throughout this manual should be disregarded.
2. Units shipped to all other countries are equipped with an AC Voltage Selector Switch on the rear panel that is preset at the factory to the voltage generally available in the destination area.

AC VOLTAGE SELECTION

The KA-8100 operates on 110 ~ 120 volts or 220 ~ 240 volts AC. Before operating the unit, make sure that the position of the AC Voltage Selector Switch matches your line voltage. If not, it must be changed to the proper setting in accordance with the instructions below.

Note:
Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.



1. Remove screws and stopper plate.
2. Switch levers to opposite side.
3. Lock levers by attaching stopper plate to opposite side screws.

( ) is European type.

AC VOLTAGE SELECTOR SWITCH

CONTENTS

FEATURES

1. DC POWER AMPLIFIER

Although an ordinary amplifier is generally provided with input or interstage capacitors, the KA-8100 power amplifier section does not have any input or interstage capacitors. In addition, the NF loop circuit also does not have any capacitor that may be accompanied with a time constant. Therefore there is no phase difference throughout the frequency range including the super-low-frequency zone. Since the DC power amplifier is almost free from distortion, excessive distortion, rising time, etc., it offers extensively improved sharpness and depth of sound as well as gorgeous dimensional feeling.

Resolution is very good even at a low sound level, and there is no oppressive sensation at a high sound level. This amplifier assures highly qualified reproduction.

2. TWO INDEPENDENT POWER SUPPLIES

The KA-8100 uses the equivalent of two separate monophonic amplifiers, each with its own power supply. This arrangement completely eliminates the occurrence of *dynamic crosstalk* which is considered to influence the quality of sound rigorously.

In particular, the power supply for the preamplifier section employs exclusively designed transistorized regulators to remove a mutual interference between former and latter stages of the amplifier.

3. ICL EQUALIZER WITH CONSTANT-CURRENT MIRROR LOAD FET DIFFERENTIAL CIRCUIT

This is a 3-stage direct-coupled ICL circuit consisting of the constant-current bias current mirror load differential circuit, the class A constant-current load Darlington circuit, and the pure complementary SEPP circuit. The use of low-noise circuit elements and the optimum selection of circuit constants assure excellent performance characteristics such that the phono S/N ratio is 85 dB (IHF A), the distortion factor is 0.003% (20 Hz ~ 20 kHz REC OUT), and the RIAA deviation is ±0.2 dB.

4. LOW DISTORTION, HIGH S/N RATIO TONE CONTROL CIRCUIT

A tone control circuit is necessary to correct the acoustic response of reproduced sound which may be affected by the room acoustics. However, ordinary tone control circuit produces more distortion than any other element in the amplifier. Kenwood solved this problem by using FET differential amplifier in the first stage of the amplifier, as well as baxandal tone control to circuit to reduce the unwanted distortion and noise to negligible level.

5. FULL RANGE OF STEEP-SLOPE FILTER

The low frequency filter, effective from 40 Hz and below at a slope of 12 dB/oct and subsonic filter with a slope 6 dB/oct below 18 Hz reduces turntable rumble or other low frequency interference without materially affecting musical response, while at high frequency filter effective above 8 kHz with slope of 12 dB/oct helps to reduce record scratch or other high frequency interferences.

6. SPECIAL TAPE-THROUGH CIRCUITRY

The KA-8100 has facilities for simultaneous recording by two recorders and for dubbing, either from deck A to B or vice-versa.

In addition, Kenwood's tape-through circuitry allows you to dub while listening to a different program source. This may not be a feature you will use every day, but it is quite practical and will be appreciated when the occasion arises.

7. GAIN CONTROL

The gain in flat amp can be switched to +10 dB, 0, −10 dB. It works as a normal attenuator and direct playback is possible with a low output type cartridge when set at the +10 dB position.

8. ACCURATE VOLUME CONTROL EXPANDS FINE ADJUSTMENT

The volume control is equipped with a precision attenuator of the type employed in measuring instruments and other high reliability equipment. Volume adjustment can be easily performed when listening at low volume levels, temporarily reducing the volume, or employing a low input level (high gain) power amplifier. The volume adjustment range can also be expanded by employing the volume control and gain control switch in combination.

9. LOUDNESS CONTROL WITH 3-LEVEL, 2-FREQUENCY CHANGE-OVER FEATURE

This loudness control assures very wide and fine adjustments for the compensation of the sound field, acoustic feeling, and low-frequency performance of the speaker systems.

10. Kenwood's excellence of design and superior craftsmanship is evident not only in the electronics of the KA-8100 but also in all the controls.

GUIDE TO SAFETY USAGE

HANDLING OF POWER PLUG

When you connect or disconnect the power plug from the wall outlet, never do it with wet hands to avoid unexpected accident from electric shock. Hold the power plug itself when you pull it out of the outlet. It will be a good habit if you pull out the power plug before you leave your house for a long time.

POWER CORD

The power cord must not be pulled strongly, nor bent forcibly, nor extended by connecting an extra cord. This will damage the cord and be a cause of electric shock and a fire.

PREVENTION OF INTRUSION OF METALLIC SUBSTANCE IN UNITS

The case top is provided with ventilation holes. Never close these holes with ornamental cloth, etc. Be careful not to put a coin, hair pin, needle, etc., into the unit through the holes. Otherwise, it may be a case of malfunction and electric shock. Such trouble is often caused by infants.

PREVENTION OF MODIFICATION

Each unit is shipped after passing careful adjustments to the optimum operating conditions. The unit interior must not be modified. Some parts of the interior are applied with high voltage. Never dismantle the case and touch the internal parts. Only the qualified servicemen are in charge of check-in the interiors.

GENERAL NOTES FOR CORRECT USAGE

NEVER HINDER THE AMPLIFIER FROM VENTILATION

- In order to prevent internal temperature rise, the amplifier case is provided with ventilation holes. Therefore, the amplifier should be installed at least 1-31/32" (5 cm) distant from other things.
The ventilation holes must not be closed by curtain, table cloth, etc.

- If generation of a large output power for a long time is attempted, the amplifier must not be installed in stacks with other units. The tuner and the amplifier should be installed side by side. If there is no ample space for installation, then the amplifier must be installed in the highest position.

PROTECTION OF SPEAKERS SYSTEM

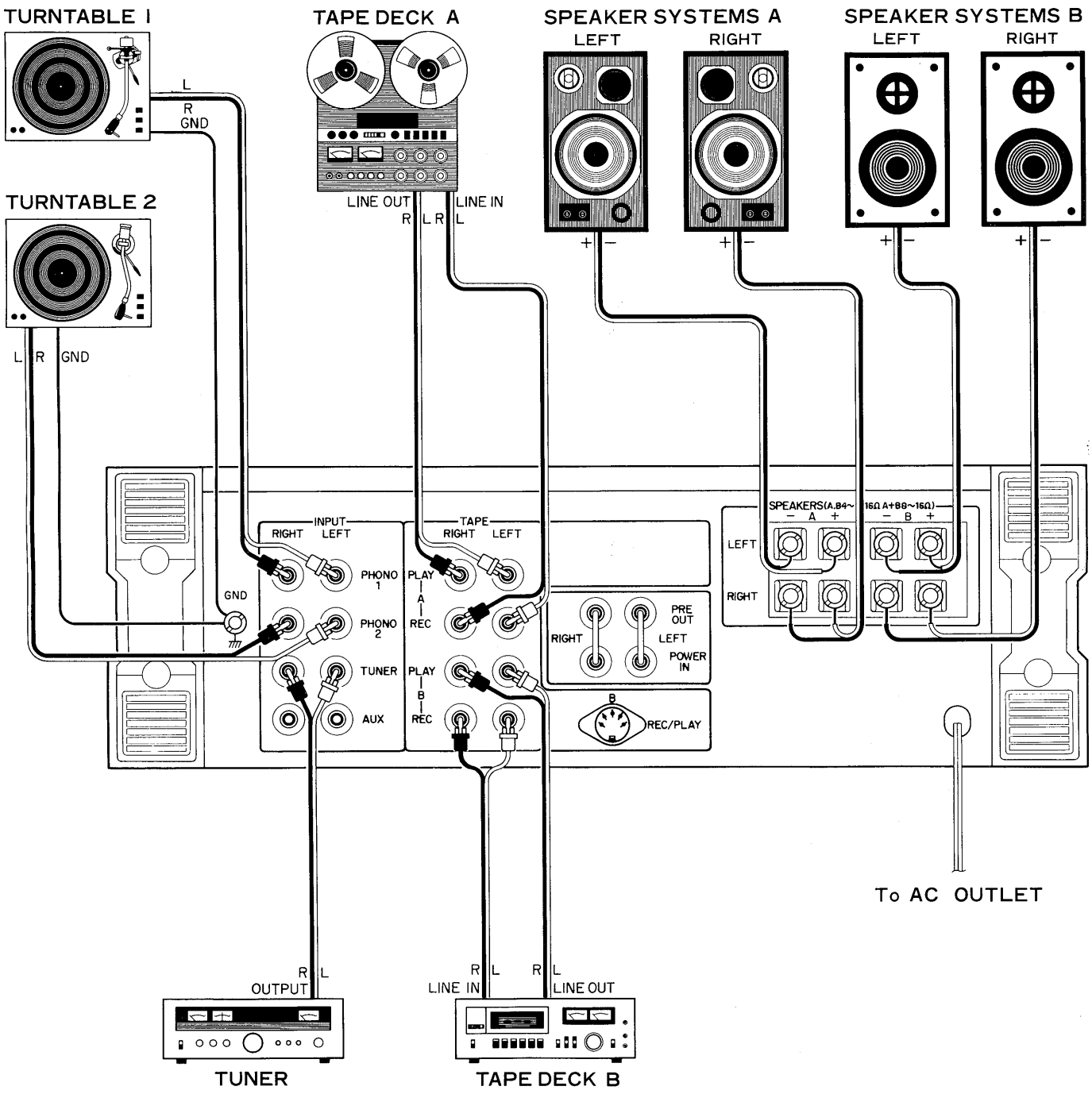
- Lower the sound volume when switching the amplifier on or changing over the program source to another. You should make it a rule to move the volume control knob to a low sound level before you turn the POWER switch on. Sudden feeding of a large input power may damage the speaker systems. If you keep such a habit, the speaker systems can be protected against the attack of violent noise occurring when a stylus is put on a disk or an FM station is selected.

- Always pay attention to the permissible input for the speaker systems in operation. If the sound volume exceeds the permissible levels, the speaker systems may be destroyed.

PRE OUT POWER IN TERMINAL

- Exactly insert the two short pin plugs into the connectors between the pre-amplifier and the power amplifier, located on the amplifier rear panel. No sound is generated if these plugs are left disconnected.

INTERCONNECTING DIAGRAM



AC OUTLETS

The AC outlets on the rear panel of the amplifier may be used to supply power to other components such as a turntable, tape deck, etc.

1. SWITCHED outlets
   These outlets are controlled by the POWER switch on the front panel. (The total capacity is 100 watts maximum.)
2. UNSWITCHED outlet
   This outlet delivers power at all times. (The capacity is 250 watts maximum.)

Notes:

1. Units shipped to the European countries are not equipped with the AC OUTLETS.
2. Do not connect any equipment whose power consumption exceeds the capacity of each outlet.

CONNECTING INSTRUCTIONS

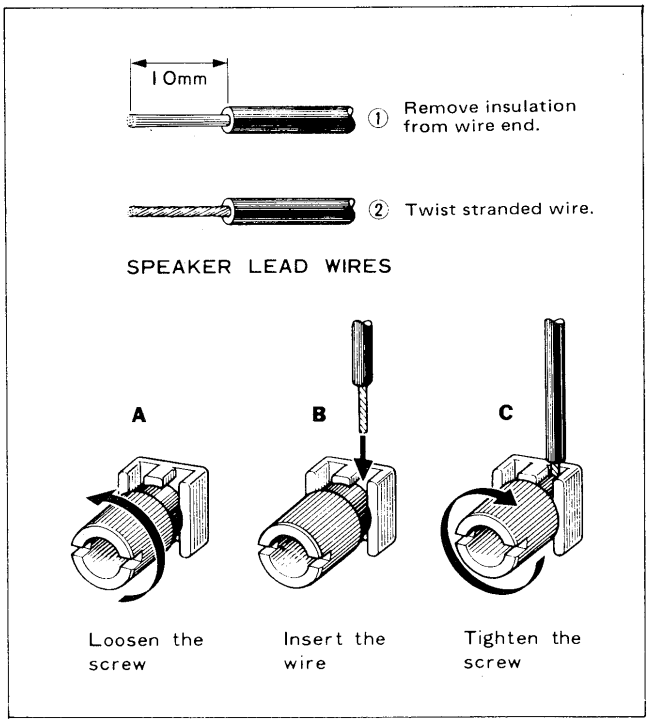
SPEAKER CONNECTING AND SPEAKER SWITCH

In connecting only one pair of speakers connect the right speaker to "RIGHT" and the left speaker to "LEFT" of SPEAKERS A terminals. Should (+) or (–) of either right or left channel be reversely connected, sounds at the center section will be adversely affected by lack of separation. To connect an additional pair of speakers, connect the right speaker to "RIGHT" and the left speaker to "LEFT" of SPEAKERS B terminals.

When connecting the speaker leads to the speaker terminals, make sure that the bare wire strands at the ends of the speaker leads do not touch the adjacent terminal.

It is recommended that the tips of the speaker leads are soldered, or the strands of individual leads are twisted together to eliminate any possibility of short-circuits forming in the speaker connecting network.

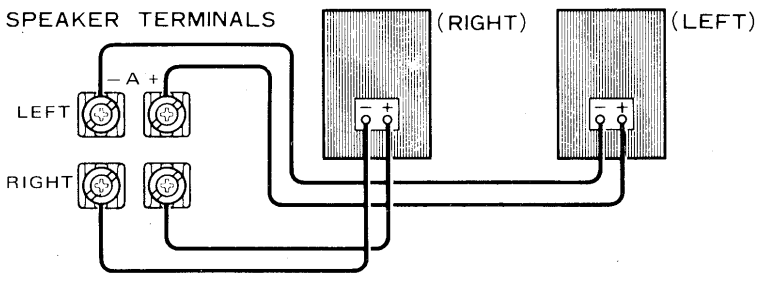
Note:
When only one pair of speakers are used, please ensure that the impedance of each speaker is 4 ohms or more.
When two pairs of speakers are used at the same time (A+B), please ensure that the impedance of each speaker is 8 ohms or more.



PHASING OF THE SPEAKERS

Speaker phasing can be determined in the following manner:

1. Set the MODE switch to MONO.
2. Set the INPUT SELECTOR switch to PHONO 1, and adjust the VOLUME control to the desired listening level.
3. Play a familiar record.
4. If the sound comes directly from the front, the speakers are in phase. If the sound comes from both sides and there is a noticeable loss in low frequencies, the speakers are out of phase. In this case reverse the leads on one speaker.



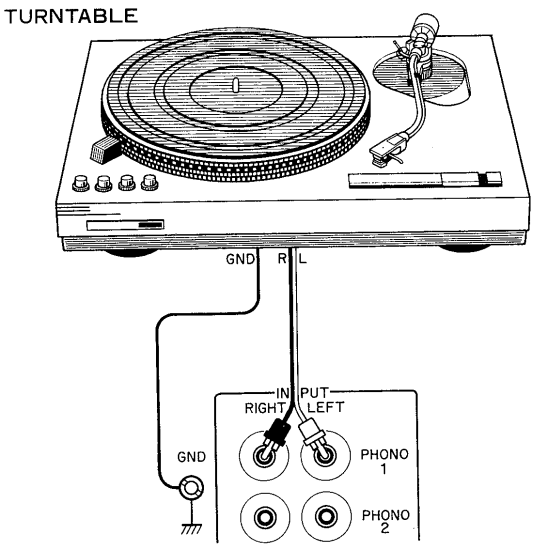
CONNECTING INSTRUCTIONS

TURNTABLE CONNECTION

The two shielded audio cables from your stereo turntable are normally terminated with phono plugs. Connect the left channel of the turntable to the "LEFT" PHONO 1 input jack and the right channel to the "RIGHT" PHONO 1 input jack.

If an additional turntable is used in order to operate two turntables or two tonearms on the same turntable, connect the left channel to the "LEFT" PHONO 2 input jack and the right channel to the "RIGHT" PHONO 2 input jack.

If the turntable has a grounding wire, connect it to this amplifier's GND terminal to avoid hum.



TAPE DECK CONNECTION

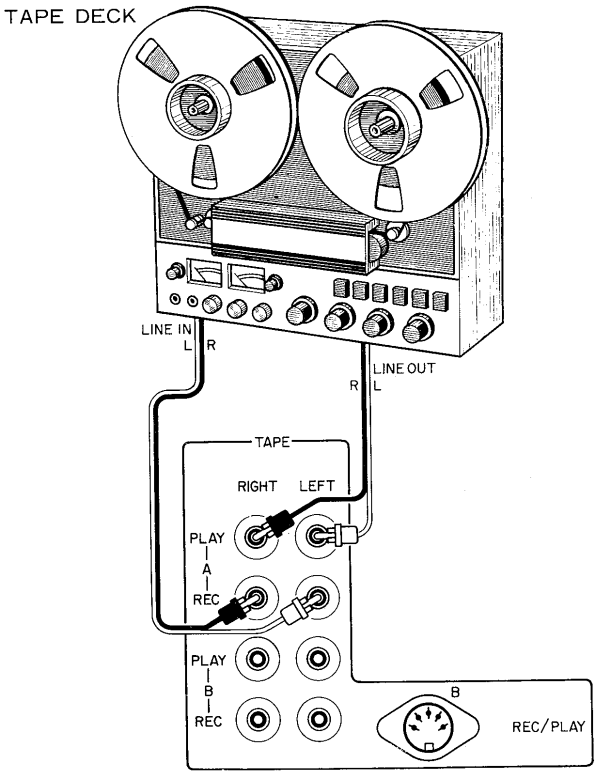
Recording

A tape deck can be connected for recording as follows: left channel input of the tape deck to TAPE A "LEFT" REC jack, right channel input of the tape deck to TAPE A "RIGHT" REC jack.

Playback

A tape deck can be connected for playback as follows: left channel output of the tape deck to TAPE A "LEFT" PLAY jack, right channel output of the tape deck to TAPE A "RIGHT" PLAY jack.

If an additional tape deck is used and two tape decks are operated simultaneously, the same connections must be provided for TAPE B jacks.



DIN CONNECTOR (REC/PLAY CONNECTOR)

If your tape deck is equipped with a DIN connector, connect it to the "TAPE B" REC/PLAY connector with a DIN connecting cord. A DIN connector enables recording and playback with this single cord.

Notes:

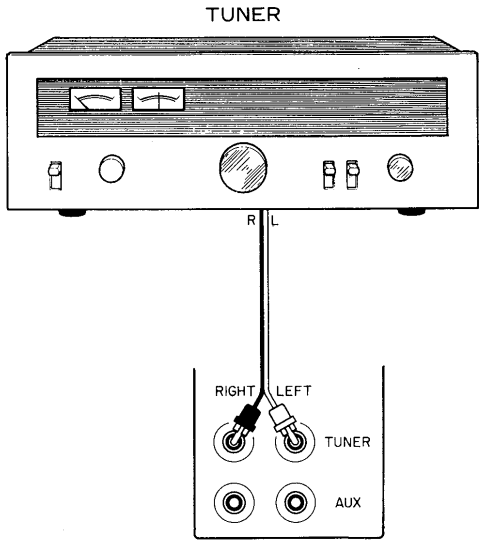
1. Please note that the REC/PLAY connector corresponds to the TAPE B REC and TAPE B PLAY jacks – the signal must be controlled with TAPE (MONITOR) switch on the front panel.
2. When a DIN cord is connected, the TAPE B PLAY and REC jacks should not be used.

CONNECTING INSTRUCTIONS

TUNER CONNECTION

Use the TUNER terminals for connection to an FM stereo or AM-FM stereo tuner.

Connect the left channel of the tuner to the "LEFT" TUNER input jack and the right channel of the tuner to the "RIGHT" TUNER input jack.



AUX (AUXILIARY INPUTS)

High level AUX input jacks are for miscellaneous sources, such as extra tape decks, additional tuners and/or receivers, TV sound outputs, and other external components.

TECHNICAL DESCRIPTION

DC Power Amplifier

In many ways the direct current (DC) amplifier is the ideal amplifier for audio use.

Kenwood audio engineers have taken up the challenge of producing this ideal amplifier. The result has been success in producing a power amplifier which makes this dream come true.

Characteristics of DC Amplifier

1. They make reproduction of low frequencies down to subsonic and DC levels possible.
   The result is to give a greater sense of power in the audio reproduction which greatly increases enjoyment of music and reproduces the low-frequency high-energy sounds of a live performance as only a DC amplifier can.
2. There is zero phase difference between input and output.
   Because there are no capacitors in the signal path to cause phase rotation, phase distortion is absent.
3. Output waveform is a faithful duplication of the input waveform. Although this would seem to be a natural prerequisite for a hi-fi amplifier, it is a fact that only a DC amplifier makes faithful duplication possible.

The performance of a DC amplifier depends upon the stability of each individual circuit within it. In the input stage, special dual FETs are used, intended for the most demanding electronic computer applications (in packs of perfectly balanced pairs). This is followed by a three-stage differential amplifier operating in Class A, in which the open loop gain is high, and in which a fully adequate degree of negative feedback is applied with a pre-driver load circuit in which the power transistor bias is stabilized by a constant current supply circuit. This circuit configuration gives excellent stability and extremely wide frequency response.

CONNECTING INSTRUCTIONS

PRE OUTPUT POWER IN JACKS

Independent Preamplifier/Power Amplifier System

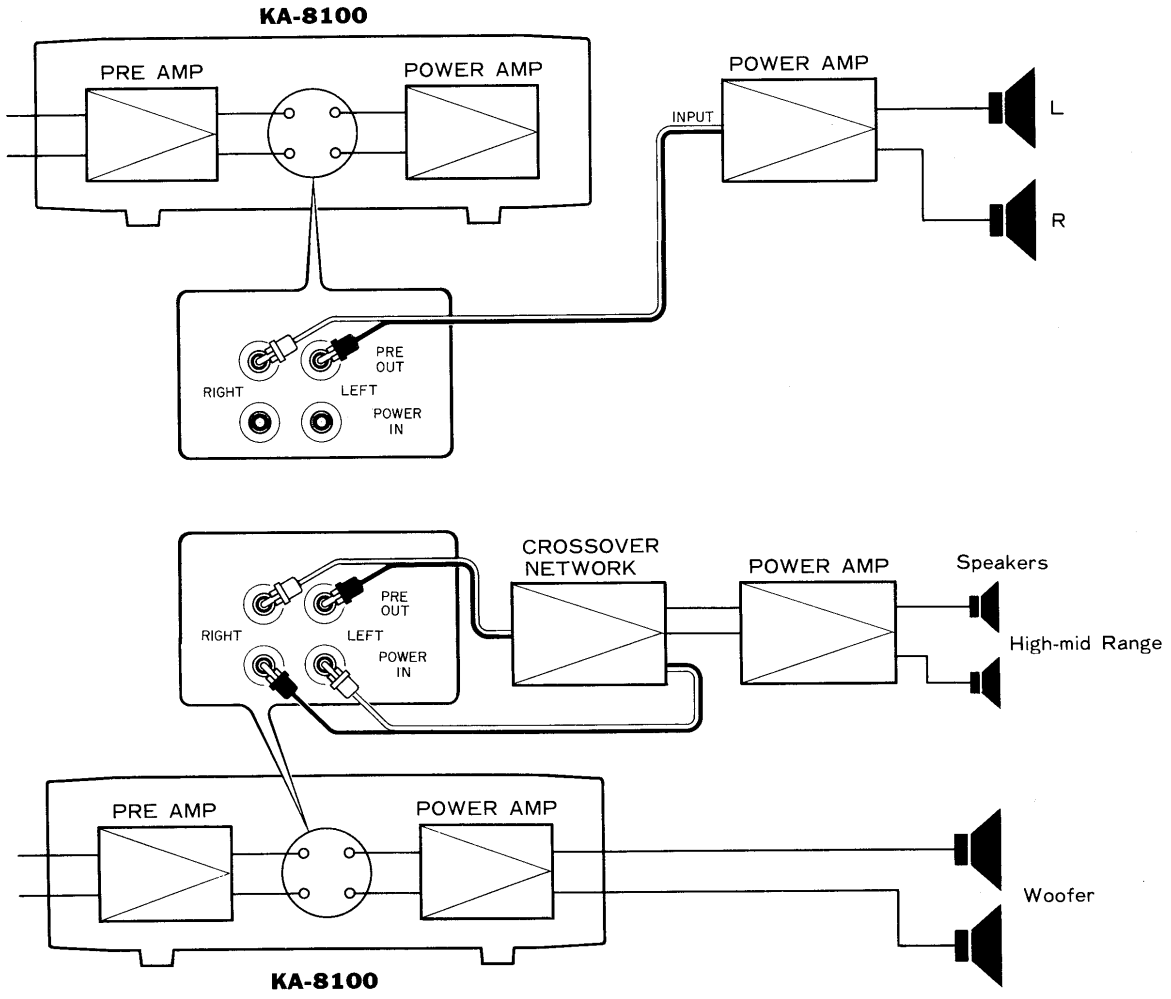
By utilizing these jacks, the KA-8100 can be used independently to drive an external power amplifier or preamplifier. This allows comparison listening between the KA-8100 power amplifier and a homebuilt or other separate power amplifier. And also an external preamplifier can be connected to the KA-8100 power amplifier section to compose a stereo system. In such a case, first the power switch off, then remove the short pin plug.

A Multi-amplifier System

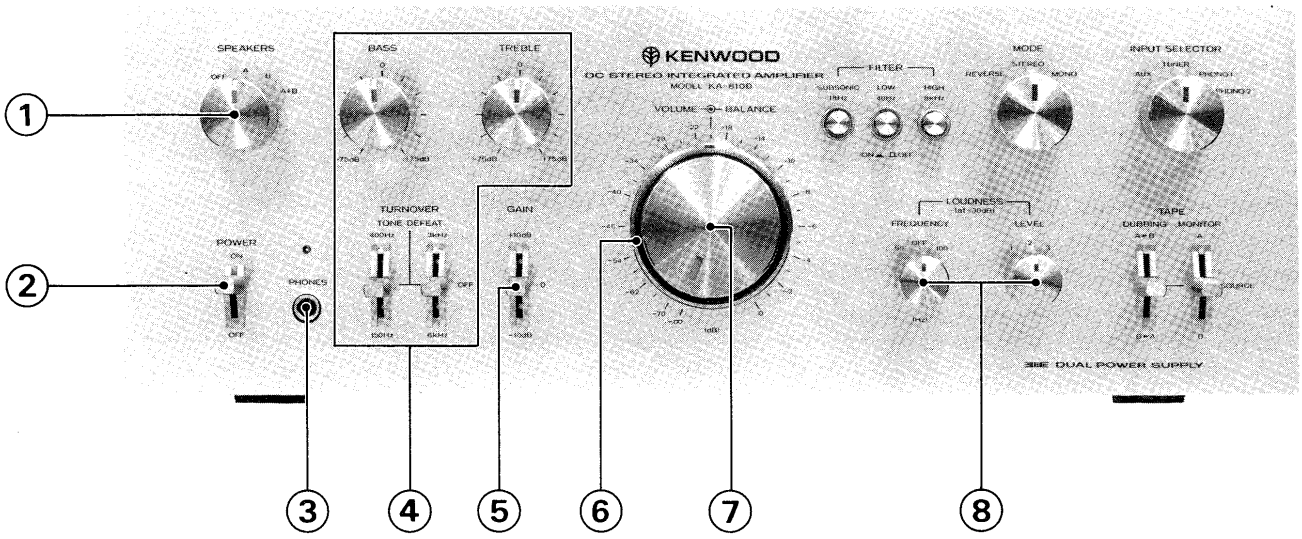
By adding an electronic crossover network and one or two additional power amplifiers, a high-grade multi-amplifier system can be built in the following manner.

1. Connect the PRE OUT jacks to the input jacks of the crossover network.
2. Connect the POWER IN jacks to the low range output jacks of the crossover network.
3. Connect the HIGH range output jacks of the crossover network to the input jacks of a separate power amplifier for the high frequency range.
4. Connect the speakers for the lower frequencies to the amplifier, and those for the higher frequencies to the separate amplifiers.

Note:
For further details on connections, etc, see the instruction manual supplied with the adaptor.



CONTROLS AND THEIR FUNCTIONS



① SPEAKERS switch

OFF – This position silences all speakers for private headphones listening.

A – Activates speakers connected to the "A" speaker terminals on the rear panel.

B – Activates speakers connected to the "B" speaker terminals on the rear panel.

A+B – Activates simultaneously two sets to speaker systems connected to the "A" and "B" speaker terminals.

② POWER switch

ON – This position turns the amplifier on. The pilot lamp lights when the power is on.

OFF – This position turns the amplifier off.

③ PHONES jack

Plug stereo headphones into this jack. For private listening through headphones, set the SPEAKERS switch to the OFF position.

④ TONE controls

The BASS and TREBLE controls are for adjusting the bass and treble response. This is a click stop type control graduated by 1.5 dB. Each knob controls both left and right channels equally. Turning the knobs clockwise increases bass and treble response and counterclockwise decreases bass and treble response.

You can select the bass and treble TURNOVER frequencies (150 Hz or 400 Hz for bass control, 3 kHz or 6 kHz for treble control) with the TURNOVER switches.

OFF position provides completely flat frequency response with tone control circuit deactivated.

Switch positions and functions are as follows:

150 Hz: ±7.5 dB at 50 Hz, 3 kHz: ±7.5 dB at 10 kHz

400 Hz: ±7.5 dB at 100 Hz, 6 kHz: ±7.5 dB at 20 kHz

⑤ GAIN control

Set to –10 dB to attenuate the output by 10 dB. For example, with GAIN set at –10 dB and VOLUME at –22 dB, it means that this amplifier is operating at –32 dB gain below its rated level.

This position (–10 dB) can also be used to briefly lower the volume when changing records or tapes. Set to +10 dB to boost the output by 10 dB.

⑥ BALANCE control

This BALANCE control (Outer knob) adjusts unequal volume from any program source in right and left channels. The left channel is accentuated when this adjuster is turned from center toward the left side, and conversely.

⑦ VOLUME control

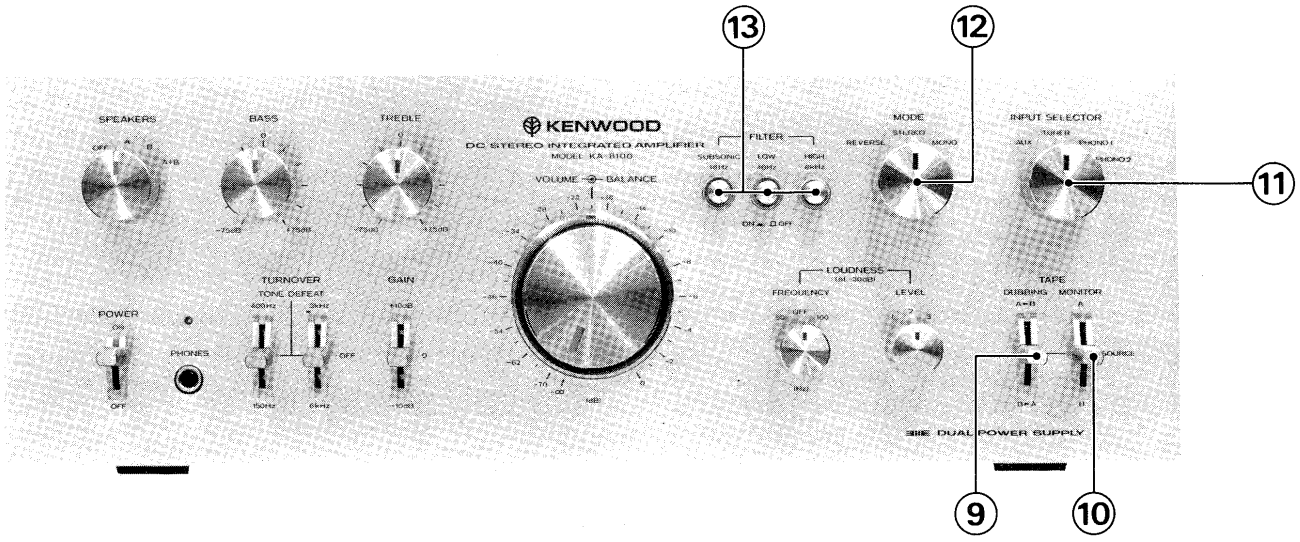
Adjust output level to speakers and headphones. Scale is graduated in dB, and when used in conjunction with the GAIN control, finer and wider range attenuation can be performed.

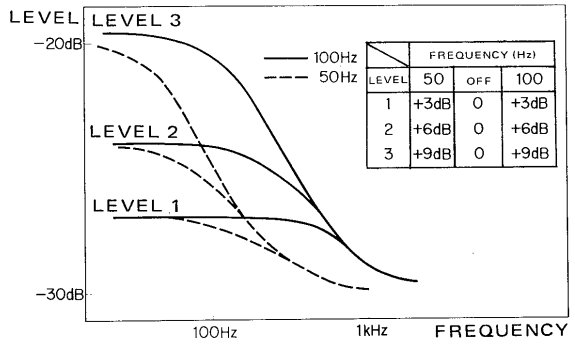
⑧ LOUDNESS control

This switch is used for the compensation of the sound field and speaker performance, and also for the correction of acoustic feeling in low-frequency zone when a source is reproduced at a low sound level.

Since both low frequency and level can be controlled independently, quite exquisite adjustments are possible in accordance with the conditions of the speaker systems and the listening room. The relationship between switch positioning and function is shown in the following diagram. If the frequency knob is in off position, the frequency characteristic is completely flat and loudness control becomes ineffective.

CONTROLS AND THEIR FUNCTIONS





	FREQUENCY (Hz)		
LEVEL	50	OFF	100
1	+3dB	0	+3dB
2	+6dB	0	+6dB
3	+9dB	0	+9dB

⑨ TAPE (DUBBING) switch

Switch positions and functions are as follows:

DUBBING (A ▶ B) – For dubbing from a tape deck connected to the TAPE A jacks into a tape deck connected to the TAPE B jacks.

DUBBING (B ▶ A) – For dubbing from a B tape deck to A.

For further details refer to pages 12, 13.

⑩ TAPE (MONITOR) switch

Switch positions and functions are as follows:

SOURCE – The source signal is heard.

A – For monitoring a recording or for playback on a tape deck connected to the TAPE A jacks.

Sound recorded on the tape is heard.

B – For monitoring a recording or for playback on a tape deck connected to the TAPE B jacks.

Sound recorded on the tape is heard.

For further details refer to pages 12, 13.

⑪ INPUT SELECTOR switch

Switch positions and functions are as follows:

AUX – Selects source connected to the AUX jacks.

TUNER – In this position the tuner is available if connected to the TUNER input jacks on the rear panel.

PHONO 1 – In this position the turntable is available if connected to the PHONO 1 input jacks on the rear panel.

PHONO 2– In this position the turntable is available if connected to the PHONO 2 input jacks on the rear panel.

⑫ MODE switch

Switch positions and functions are as follows:

STEREO – This provides stereophonic reproduction of any stereo program source. The left channel is heard from the left speaker, and the right channel is heard from the right speaker.

REVERSE – Stereophonic reproduction with reversed channels: left channel to right speaker, right channel to left speaker.

MONO – Monophonic reproduction. The left and right channels are mixed together and heard from both speakers.

⑬ FILTER buttons

SUBSONIC – Frequencies below 18 Hz are attenuated by 6 dB/octave. Although such subsonic frequencies are inaudible to the human ear, they can cause intermodulation distortions and even damage to the loudspeakers. It is recommendable to depress (in) the button at all times, even if no record rumble etc. is heard. OFF position is no attenuation of subsonic frequencies.

LOW – Setting this switch to ON reduces low frequency noise, such as turntable rumble, etc., which may interfere with program material.

Frequencies below 40 Hz are attenuated by 12 dB/octave.

HIGH – Setting this button to ON (in) reduces any high frequency noise, such as tape hiss, record scratch, etc.

Frequencies above 8 kHz are attenuated by 12 dB/octave.

OPERATING INSTRUCTIONS

PRIOR TO SWITCHING POWER ON

1. VOLUME control at $-\infty$.
2. GAIN control at 0.
3. TAPE DUBBING, TAPE MONITOR switch at SOURCE.
4. SPEAKERS switch at correct position for speakers to be driven: A, B, A+B.
5. MODE switch at STEREO position.
6. BALANCE, BASS and TREBLE controls at center position.
7. TURNOVER switch at OFF position.

RADIO RECEPTION

1. Set the INPUT SELECTOR switch to TUNER.
2. Operate the tuner as usual.
3. Use the VOLUME, BASS, TREBLE, BALANCE, etc. controls to adjust sound as desired and to match the acoustic conditions of your room.

TURNTABLE OPERATION

1. If the turntable is connected to the PHONO 1 inputs, set the INPUT SELECTOR switch at PHONO 1. If the turntable is connected to the PHONO 2 inputs, set the INPUT SELECTOR switch to position PHONO 2.
2. Set the turntable in operation.
3. Use the VOLUME, TREBLE, BALANCE, etc., controls to obtain the desired listening volume and tonal quality.

TAPE DECK OPERATION

TAPE MONITORING

If you use the amplifier with 3-head type tape decks, you can check the sound quality of the recording that is being made by momentarily comparing the recorded signal with the source signal as follows: Set the TAPE (MONITOR) switch to A (or B) to monitor the recorded sound. Set the TAPE (MONITOR) switch to SOURCE to monitor the source signal before it is recorded.

WHEN RECORDING WITH ONE TAPE DECK

Connect the tape deck to either the TAPE A jacks or TAPE B jacks on the rear panel.

Recording

1. Set the INPUT SELECTOR switch to the desired program source.
   Set the TAPE (MONITOR) switch to A or B, whichever side the tape deck is connected.
2. Recording level should be adjusted with the volume control of your tape deck.
3. Recording is not affected by the VOLUME, BASS, TREBLE, FILTER, LOUDNESS, etc., controls of the amplifier.

WHEN RECORDING WITH TWO TAPE DECKS

Connect one tape deck to TAPE A jacks and the other to TAPE B jacks on the rear panel.

Recording

1. Set the INPUT SELECTOR switch to the desired program source.
2. Set the TAPE (MONITOR, DUBBING) switch to SOURCE.
3. Recordings can now be made into both tape decks simultaneously.
   To monitor these recordings, use the TAPE (MONITOR) switch as follows: Set it to A to monitor the recording being made with the tape deck connected to TAPE A jacks. Set it to B to monitor the recording being made in the tape deck connected to TAPE B jacks.
4. Recording levels should be adjusted exactly as described previously for single tape deck operation.

Playback

1. The INPUT SELECTOR switch can be at any position.
2. Set the TAPE (MONITOR) switch to the corresponding position (A or B).
3. Adjust volume and tonal quality.

Dubbing

Tape recordings may be easily duplicated from one tape deck to another with minimal loss of quality by setting the TAPE (DUBBING) switch to (A ▶ B) or (B ▶ A) as follows:

1. The INPUT SELECTOR switch can be at any position.
2. Set the TAPE (DUBBING) switch to (A ▶ B) when it is desired to copy recorded material

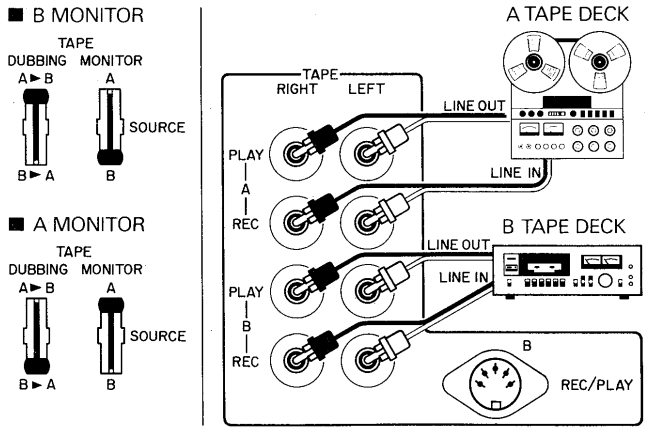
on the tape deck A' for re-recording on the tape deck B.
Set the TAPE (DUBBING) switch to (B ▶ A) when it is desired to copy a recording on the tape deck B for re-recording on the tape deck A. The recording can be monitored.

3. Operate both tape decks simultaneously.

THE THROUGH CIRCUIT

This unit permits listening to other program sources such as FM broadcast or record while tape dubbing.

1. Set the TAPE (DUBBING) switch to (A ▶ B) or (B ▶ A).
2. Set the TAPE (MONITOR) switch to SOURCE.
3. Set the INPUT SELECTOR switch to the desired program source.



Tape Dubbing

MAINTENANCE

ACOUSTIC FEEDBACK

Occasionally a disturbing howling sound caused by acoustic feedback, may be heard. This is generally caused by the relative positions of the turntable and speaker enclosures. The sound pressure radiated from the speaker box surrounds and vibrates the turntable.

This vibration is picked up by the cartridge, sent to the amplifier as an electrical signal, and returned to the speaker. This again causes the speakers to radiate vibration which induces sympathetic vibrations in the turntable and cartridge. Sympathetic vibrations are reinforced with each repeating cycle and result in an undesirable sound called oscillation or "howling". To prevent it, keep your turntable away from your speakers. Also mounting your turntable on shock-absorbing pads may help.

CLEANING PRECAUTIONS

Do not use alcohol, thinner or gasoline when cleaning the amplifier surface. Use a silicon cloth or a soft dry cloth.

POINTS TO BE CHECKED PRIOR TO SERVICING

In initially installing this amplifier improper connections to a tuner or turntable may result in one of the following indications of trouble. Their possible causes and corrective measures are listed below to facilitate installation.

	SYMPTOM	PROBABLE CAUSE	CORRECTION
During AM, FM or Record Playback	No pilot lamp indication, no sound although AC is switched ON.	a) Poor AC plug connection. b) Short pin plug disconnected.	a) Check plug contact. b) See that short pin plug is firmly plugged into pre-out power in terminals.
	No sound from LEFT and RIGHT.	a) Speaker cords disconnected. b) SPEAKERS switch set to OFF position. c) Volume Control (extreme left). d) TAPE (MON) switch at A or B position.	a) Check connections from amp. output to speakers. b) SPEAKERS switch should be switched to OFF only when using stereo headphones. c) Set to appropriate volume level. d) Always set to SOURCE except when using tape decks.
	Sound only from one side.	a) Poor speaker cord connections. b) BALANCE control set to one extreme or other.	a) Check amp. output and speakers connections. b) Adjust BALANCE control.
	Difference in volume level of radio and phono.	Difference in received signal and phono output levels.	Set to appropriate volume level.
During Phono Record Playback Only	No sound from LEFT and RIGHT, or sound only from one side.	Turntable output cord disconnected.	See that turntable output cord is firmly plugged into amp. input.
	Loud hum drowns out sound.	Poor turntable output cord prong connections.	See that turntable output cord is firmly plugged into amp. input.
	Sound audible but background hum occurs.	a) Turntable output cord picking up hum from AC cord. b) Turntable not grounded.	a) Keep turntable output cord away from AC cords. Choose cord paths which keep hum at a minimum. Reverse turntable AC plug connections. b) Connect ground wire to GND terminal.
	Sound audible but continuous background buzz interferes.	TV signal picked up by Turntable output cord. Frequency occurs near TV transmitting antenna.	Route turntable cord so that hum is minimized.
	Howling noise occurs when volume is raised or bass response is increased.	Speaker vibrations induce feedback in Pickup.	Increase distance between turntable and speakers. Choose speaker locations carefully. Remember, loose flooring induces howling.

SPECIFICATIONS

POWER AMPLIFIER SECTION

POWER OUTPUT

75 watts* per channel minimum RMS, at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion.

Both Channels Driven	75 + 75 watts 8 ohms at 1,000 Hz
	90 + 90 watts 4 ohms at 1,000 Hz
Dynamic Power Output	330 watts 4 ohms
Total Harmonic Distortion	0.03% at rated power into 8 ohms
	0.01% at 1 watt into 8 ohms
Intermodulation Distortion	0.03% at rated power into 8 ohms
(60 Hz : 7 kHz = 4 : 1)	0.01% at 1 watt into 8 ohms
Power Bandwidth	5 Hz to 50,000 Hz
Frequency Response	DC to 100,000 Hz +0 dB, −1.5 dB
Signal to Noise Ratio (IHF A)	115 dB (short circuited)
Damping Factor	50 at 8 ohms
Input Sensitivity/Impedance	1.0V/50 kohms
Speaker Impedance	Accept 4 ohms to 16 ohms

PRE AMPLIFIER SECTION

Input Sensitivity/Impedance/Signal to Noise Ratio (IHF. A)		
Phono 1		2.5 mV/ 50 kohms/ 85 dB
Phono 2		2.5 mV/ 50 kohms/ 85 dB
Tuner		150 mV/ 50 kohms/ 110 dB
AUX		150 mV/ 50 kohms/ 110 dB
Tape A, B		150 mV/ 50 kohms/ 110 dB
Maximum Input Level for Phono 1		250 mV (rms), T.H.D. 0.02% at 1,000 Hz
Output Level/Impedance		
Tape REC	(Pin)	150 mV/ 220 ohms
	(DIN)	30 mV/ 80 kohms
PRE OUT		1 V 470 ohms
Frequency Response		
Phono		RIAA standard curve +0.2 dB, −0.2 dB
AUX & Tape		7 Hz to 50,000 Hz +0 dB, −1 dB
Tone Control		
Bass	(Turnover at 150 Hz)	±7.5 dB at 50 Hz
	(Turnover at 400 Hz)	±7.5 dB at 100 Hz
Treble	(Turnover at 3 kHz)	±7.5 dB at 10,000 Hz
	(Turnover at 6 kHz)	±7.5 dB at 20,000 Hz
Loudness Control		1 at 50 Hz 1) +3 dB, 2) +6 dB, 3) +9 dB
(at −30 dB Volume Level)		2 at 100 Hz 1) +3 dB, 2) +6 dB, 3) +9 dB
GAIN Control		+10 dB, 0 dB, −10 dB
Subsonic Filter		18 Hz, 6 dB/oct
Low Filter		40 Hz, 12 dB/oct
High Filter		8 kHz, 12 dB/oct

GENERAL

Power Consumption		600 watts at full power
A.C. Outlet		Switched 2, Unswitched 1
Dimensions		W 16-15/16" (430 mm)
		H 5-7/8" (149 mm)
		D 15-1/8" (384 mm)
Weight	(Net)	32.0 lbs. (14.5 kg)
	(Gross)	32.6 lbs (16 kg)

* Measured pursuant to Federal Trade Commission's Trade Regulation rule in U.S.A. on Power Output Claims for Amplifier.

Note: Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

KENWOOD